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EXAMINER

DUONG, THOMAS

ART UNIT

PAPER NUMBER

2145

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/661,103

Applicant(s)

DUBROVSKY ET AL.

Examiner

Thomas Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 and 35-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 and 35-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

AD

## DETAILED ACTION

### *Response to Amendment*

1. This office action is in response to the applicants Amendment filed on April 18, 2005. Applicant amended *claims 1* and added *claims 46-49*. *Claims 1-33 and 35-49* are presented for further consideration and examination.

### *Information Disclosure Statement*

2. The information disclosure statement filed on April 18, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication (particularly, George Reese's "Database Programming With JDBC and Java" or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-33 and 35-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Nolan (US006640278B1).

5. With regard to claims 1, 12, 24, 27, 33, and 46-49, Nolan discloses,

- *receiving a generic zone control command that controls a configuration of zoning in the storage network;* (Nolan, col.2, lines 3-41; col.3, lines 7-11; col.8, lines 37-40)

Nolan teaches of the communication interface of the SAN server receiving data storage transactions, which include read and write requests as well as status inquiries. Nolan describes *"a system for managing storage resources in a storage network according to storage domains"* (Nolan, col.2, lines 19-21) which *"includes logic to configure a set of storage locations from the one or more storage systems in the network as a storage domain"* (Nolan, col.2, lines 25-27).

Nolan's *"system includes in various combinations elements providing multi-protocol support across the plurality of communication interfaces, ... [including] a management interface for configuring the storage domains, logic for translating a storage transaction traversing the plurality of communication interfaces into and out of a common format for routing within the system among the plurality of communication interfaces"* (Nolan, col.2, lines 31-38). According to Nolan, *"storage domain management allows for the creation and optimization of a heterogeneous storage area network environment not available using prior art systems and techniques"* (Nolan, col.2, lines 15-18). Hence, Nolan anticipates a management system for configuring the storage domains, which are a

heterogeneous storage area network environment, by translating instructions among the plurality of communication interfaces using a common format.

- *translating the generic zone control command to at least one vendor specific device command of a plurality of vendor specific, device commands that respectively control zoning in a plurality of different vendor devices; and* (Nolan, col.2, lines 18-40; col.8, lines 24-34; col.9, lines 21-31; col.10, lines 27-49)

Nolan teaches of the storage transactions being translated to a common messaging format internal to the system for routing among the various interfaces, independently of the protocols executed by those interfaces. Furthermore, Nolan teaches that the storage domain routing resources map the transactions within the storage domain for particular storage devices. According to Nolan, the system *“provides a management site within a storage area network that allows for flexible configuration, redundancy, failover, data migration, caching, and support of multiple protocols”* (Nolan, col.2, lines 49-52). Hence, Nolan anticipates for a flexible configuration of the storage domains across the plurality of communication interfaces and protocols.

- *performing functions associated with the at least one vendor specific device command to control zoning in the device* (Nolan, col.26, line 24 – col.27, line 30; col.33, lines 25-33; col.34, lines 1-13; col.34, line 25 – col.35, line 2)

Nolan teaches of defining and redefining zones or storage domains at the LUN level by the storage domain manager because it offers a comprehensive set of centralized management capabilities that can be leveraged from a single management interface, regardless of vendor. Furthermore, according to Nolan, *“SANs promise flexible physical configuration, improved utilization of storage*

*capacity, centralized storage management, online storage resource deployment and reconfiguration, and support for heterogeneous environments"* (Nolan, col.33, lines 28-33). Nolan states that SAN *"provides high performance, high availability and advanced storage management functionality for heterogeneous environments. The purpose of storage domain management is to form the core of a robust SAN fabric that can integrate legacy and new equipment"* (Nolan, col.34, lines 3-7). Hence, Nolan anticipates a management system for configuring the storage domains, which are a heterogeneous storage area network environment, by translating instructions among the plurality of communication interfaces using a common format.

6. With regard to claims 2-4 and 13-15, Nolan discloses,

- *identifying a vendor of at least one device within a zone corresponding to the generic zone control command; and* (Nolan, col.8, lines 41-62)  
Nolan teaches of identifying the target device based on the identifier in the request.
- *selecting a set of vendor specific device commands, from the plurality of vendor specific device commands that respectively control zoning in devices from different vendors, that corresponds to the vendor of at least one device within the zone* (Nolan, col.8, line 63 – col.9, line 31)

Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is

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typically the format translation and communication channel driver for controlling the storage.

- *identifying devices within the zone that are affected by the generic zone control command; and* (Nolan, col.8, line 63 – col.9, line 31)

Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is typically the format translation and communication channel drivers for controlling the storage.

- *identifying vendors of the devices within the zone that are affected by the generic zone control command* (Nolan, col.8, lines 41-62)

Nolan teaches of identifying the target device based on the identifier in the request.

7. With regard to claims 5-7, 16-18, 25-26, and 35, Nolan discloses,

- *the plurality of vendor specific device commands include sets of vendor specific device commands; and* (Nolan, col.8, line 63 – col.9, line 31)

Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is typically the format translation and communication channel driver for controlling the storage.

- *wherein the step of translating includes the steps of:*

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- *selecting a set of vendor specific device commands that can control zoning within a device to which the generic zone control command is directed; and*
- *dynamically loading the set of vendor specific device commands into a management application to allow the management application to control zoning within the device to which the generic zone control command is directed* (Nolan, col.8, line 63 – col.9, line 31)

Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is typically the format translation and communication channel driver for controlling the storage.

- *selecting the at least one vendor specific device command, within the set of vendor specific device commands, that performs zoning operations, in the device to which the generic zone control command is directed, in accordance with the generic zone control command; and* (Nolan, col.8, line 63 – col.9, line 31)

Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is typically the format translation and communication channel driver for controlling the storage.

- *mapping parameters of the generic zone control command to parameters of the at least one vendor specific device command to provide the vendor specific device command with data required to perform the zoning operations in the device* (Nolan, col.8, line 63 – col.9, line 31)



Nolan teaches of mapping the storage transaction request to a virtual circuit, which comprises the necessary devices to support a storage transaction, corresponding to a virtual LUN. Finally, the virtual device in a virtual circuit is typically the format translation and communication channel driver for controlling the storage.

8. With regard to claims 8 and 19, Nolan discloses,

- *wherein the step of receiving receives the generic zone control command from a device management application that can control zoning in a network of devices manufactured by different vendors.* (Nolan, col.3, lines 1-11; col.8, lines 37-40)

Nolan teaches of the communication interface of the SAN server receiving a data storage transactions which include read and write requests as well as status inquiries. Nolan teaches of the use of the storage domain manager to configure the storage domains or zones.

9. With regard to claims 9 and 20, Nolan discloses,

- *wherein the step of performing performs the at least one vendor specific device command to control zoning within a device from a vendor that is a vendor of devices that are controlled by the vendor specific device command to which the generic zone control command is translated.* (Nolan, col.26, line 24 – col.27, line 30; col.34, line 25 – col.35, line 2)

Nolan teaches of defining and redefining zones or storage domains at the LUN level by the storage domain manager because it offers a comprehensive set of

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centralized management capabilities that can be leveraged from a single management interface, regardless of vendor.

10. With regard to claims 10 and 21, Nolan discloses,

- *wherein the step of translating includes the steps of:*
  - *loading a library of vendor specific device commands into a management application based on an identity of a vendor of a device affected by the generic zone control command; and (Nolan, col.3, lines 1-11; col.8, lines 37-40)*

Nolan teaches of the communication interface of the SAN server receiving a data storage transactions which include read and write requests as well as status inquiries. Nolan teaches of the use of the storage domain manager to configure the storage domains or zones.

- *calling the at least one vendor specific device command using the generic zone control command having the same format as the at least one vendor specific device command perform zoning operations within the device affected by the generic zone control command. (Nolan, col.26, line 24 – col.27, line 30; col.34, line 25 – col.35, line 2)*

Nolan teaches of defining and redefining zones or storage domains at the LUN level by the storage domain manager because it offers a comprehensive set of centralized management capabilities that can be leveraged from a single management interface, regardless of vendor.

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11. With regard to claims 11 and 22-23, Nolan discloses,

- *wherein the steps of receiving, translating and performing are processed by a management application that controls zoning within switches in a data storage network and wherein the step of translating includes a step of loading a dynamically linked library of vendor specific device commands, selected based on a vendor of a device affected by the generic zone control command, into a memory for use by the management application to control zoning in the device.*

(Nolan, col.3, lines 1-11; col.8, lines 37-40)

Nolan teaches of the communication interface of the SAN server receiving a data storage transactions which include read and write requests as well as status inquiries. Nolan teaches of the use of the storage domain manager to configure the storage domains or zones.

12. With regard to claims 28-32, Nolan discloses,

- *wherein the steps of receiving, translating and performing are executed by a management application operating in a management station computer system, the management application controlling zoning within switches by transmitting the at least one vendor specific device command over a network to a corresponding at least one vendor specific switch device after translation of the generic zone control command.* (Nolan, col.8, lines 41-62)

Nolan teaches of identifying the target device based on the identifier in the request. It is obvious to one of ordinary skill in the art that the first vendor specific zone control command will be sent to the first vendor specific device identified by the corresponding identifier and the second vendor specific zone

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control command will be sent to the second vendor specific device identified by the corresponding identifier.

13. With regard to claim 36, Nolan discloses,

- *wherein receiving the generic zone control command includes receiving a configuration command to configure a zone in the device to support access in a storage area network. (Nolan, col.3, lines 7-11; col.8, lines 37-40)*

Nolan teaches of the communication interface of the SAN server receiving a data storage transactions which include read and write requests as well as status inquiries.

14. With regard to claims 37-39 and 42-44, Nolan discloses,

- *wherein controlling zoning within the device includes controlling which of multiple ports in the device shall be grouped together to form the zone in the device through which servers are able to access a data storage system in a storage area network. (Nolan, col.23, line 44 – col.24, line 15; col.26, line 24 – col.27, line 30; col.27, lines 5-12)*

Nolan teaches of defining and redefining zones or storage domains at the LUN level by the storage domain manager because it offers a comprehensive set of centralized management capabilities that can be leveraged from a single management interface, regardless of vendor. Nolan teaches of defining storage domains or zones based on identifiers and port numbers.

15. With regard to claims 40-41 and 45, Nolan discloses,

- *identifying to which type of vendor device in a storage area network the generic zone control command pertains; if the generic zone control command pertains to a first vendor type of device, forwarding the generic zone control command to the first vendor type of device; and (Nolan, col.8, lines 41-62)*

Nolan teaches of identifying the target device based on the identifier in the request. It is obvious to one of ordinary skill in the art that the first vendor specific zone control command will be sent to the first vendor specific device identified by the corresponding identifier and the second vendor specific zone control command will be sent to the second vendor specific device identified by the corresponding identifier.

- *if the generic zone control command pertains to a second vendor type of device, translating the generic zone control command to a vendor specific zone control command associated with the second vendor type of switch and forwarding the vendor specific zone control command to the second vendor type of device.*

(Nolan, col.8, lines 41-62)

Nolan teaches of identifying the target device based on the identifier in the request. It is obvious to one of ordinary skill in the art that the first vendor specific zone control command will be sent to the first vendor specific device identified by the corresponding identifier and the second vendor specific zone control command will be sent to the second vendor specific device identified by the corresponding identifier.

### ***Response to Arguments***

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16. Applicant's arguments with respect to *claim 1* have been considered but they are not persuasive.

**Conclusion**

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Duong whose telephone number is 571/272-3911. The examiner can normally be reached on M-F 7:30AM - 4:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Martin-Wallace can be reached on 571/272-6159. The fax phone numbers for the organization where this application or proceeding is assigned are 703/872-9306 for regular communications and 703/872-9306 for After Final communications.

  
VALENCIA MARTIN-WALLACE  
SUPERVISORY PATENT EXAMINER

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*Thomas Duong (AU2145)*

*June 22, 2005*